



A NEW PROPOSED CLEANUP PLAN

Cleaning Up Residential Soils within the Vasquez Boulevard & Interstate 70 Superfund Site (VB/I-70) Denver, Colorado May 2003

This *NEW* Proposed Plan describes the Environmental Protection Agency's (EPA's) and the Colorado Department of Public Health and Environment's (CDPHE's) *NEW* preferred alternative for addressing public health risks from lead and arsenic found in the soil of residential yards within the Vasquez Boulevard & Interstate 70 (VB/I-70) Superfund Site. The VB/I-70 Site includes the Elyria, Swansea, Cole, and Clayton neighborhoods of Denver, Colorado and a small portion of Globeville. EPA revised this Proposed Plan in response to public comment. Last summer, in our initial Proposed Plan, many of you asked us to provide a new preferred cleanup alternative with lower cleanup levels. This is why we are introducing in this new Proposed Plan a new preferred alternative – Alternative 6.

The *NEW* preferred cleanup alternative presented in this Proposed Plan is Alternative 6, which proposes removing and replacing soil in yards that have greater than 400 parts per million (ppm) lead or 70 ppm arsenic. Under this proposal, the soil will be replaced with clean soil and yards will be restored as close to their original condition as possible. A Community Health Program will also be established for the duration of the soil cleanup. By focusing on both soil and non-soil sources of lead, such as lead paint, the Community Health Program will address some Environmental Justice concerns regarding the cumulative health impacts in the area.

**MARK YOUR CALENDAR:
THE PUBLIC HAS 30 DAYS TO COMMENT ON THIS PROPOSED PLAN
DURING OUR PUBLIC COMMENT PERIOD: MAY 28 through JUNE 26**

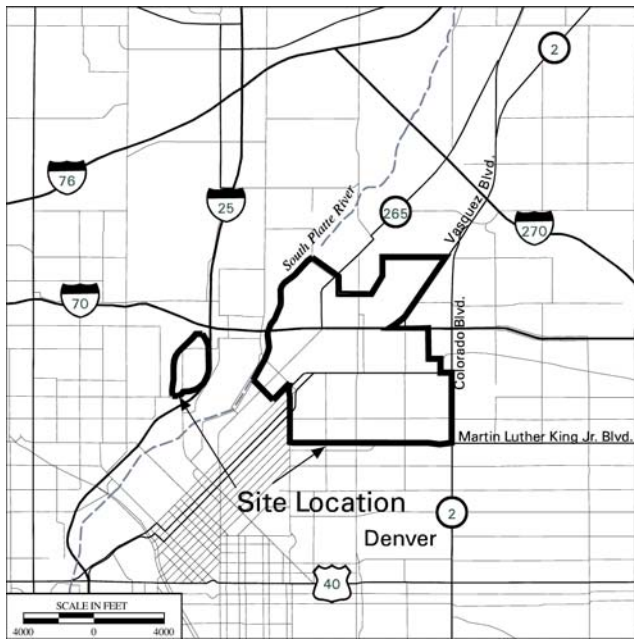
In the final cleanup decision, made after the comment period is over, EPA may modify the preferred alternative or choose a different alternative, based on public comments or new information.

Written comments will be accepted at any time during the comment period by mail to: Victor Ketellapper, Remedial Project Manager, EPA Region VIII, 999 18th Street, Suite 300, Denver, CO, 80202-2466. Comments are also being accepted via email at: vbi70@epa.gov, or through our Website at <http://epa.gov/region8/vbi70/>

You are also welcome to present your comments in person at two public meetings being held at the following times and dates: Thursday, June 19 from 4:30 to 6:30 p.m. at Swansea Recreation Center, 2650 E. 49th Ave., and Saturday, June 21 from 10:00 to 12:00 p.m. at Harrington Elementary School, 2401 East 37th Ave.

Documents about this site are available to the public at the following places: Cross Community Coalition, 2332 East 46th Ave., Valdez-Perry Library, 4690 Vine St., Ford Warren Library, 2835 High St., and the EPA Records Center, 999 18th St., 3rd Floor, South Tower.

For more information, please contact: Jennifer Chergo, (*Se Habla Espanol*) EPA Community Involvement at (303) 312-6601/(800) 227-8917, ext. 6601; or Patricia Courtney, EPA Community Involvement at (303) 312-6631/(800) 227-8917, ext. 6631. You may also call (303) 312-6384 for *EPA en Espanol*. Colorado Department of Public Health and Environment contacts are Barbara O'Grady, Remedial Project Manager at (303) 692-3395/(888) 569-1831; or Marion Galant, Community Involvement at (303) 692-3304/(888) 569-1831.



VB/I-70 Superfund Site Area Map, Denver, Colorado

How did the VB/I-70 Site become a Superfund Site?

In 1998, CDPHE requested EPA's assistance in sampling residential yards in the Swansea and Elyria neighborhoods of Denver. Smelting activities were suspected to have potentially increased levels of some metals in area yards. These metals could pose a health risk to people who live in the area.

In March 1998, EPA began a large soil sampling effort in the residential yards, schools, and playgrounds in Swansea, Elyria, and the northern half of the Cole and Clayton neighborhoods. Based on the results of this sampling effort and meetings with community members, EPA defined a study area that includes all of the Swansea/Elyria, Cole, Clayton, and a portion of Globeville neighborhoods.

On July 22, 1999, EPA added the VB/I-70 Site to the National Priorities List. This is a list of sites that EPA has prioritized for cleanup. EPA measured the levels of 23 metals in selected soil samples from the area and determined that only arsenic and lead are the metals most likely to be of human health concern in the residential soils in the neighborhoods.

EPA also included the historic Omaha & Grant and Argo smelter sites within its study area and the VB/I-70 Superfund Site. Investigations

regarding the contamination found near these portions of the Site continue. EPA will select remedies for these areas in separate documents.

In August 1999, EPA began a new soil sampling program to collect more complete information on the levels of arsenic and lead that people may be exposed to throughout their entire yard. This required that many more soil samples be collected from each yard. Soil samples were collected from local schools and parks as well. EPA also took samples of indoor dust, garden vegetables, and garden soil from selected yards.

EPA measured the levels of arsenic and lead in each sample. EPA completed this soil-sampling program in September 2000.

In order to assure protection of children in VB/I-70, EPA immediately removed the soil from 48 yards and replaced it with clean soil. EPA completed this work in the fall of 2000. This Proposed Plan addresses the remaining yards where the levels of arsenic and lead in soil do not pose an immediate risk.

Soil Sampling Results

The VB/I-70 Site includes approximately 4000 residential yards. EPA has sampled more than 3000 of these yards. As part of the final cleanup, EPA will begin another sampling program that will attempt once again to gain access to yards it has not yet sampled to determine whether they need cleaned up.

As part of the final cleanup, EPA will expand the area to be sampled to include residential yards in a small area from the convergence of Blake Street and Downing Street south to about 34th Avenue. The soils in this area may have similar elevations of lead as found within the VB/I-70 Site boundaries, based on a lead pattern observed in the VB/I-70 neighborhoods. In addition to lead, the yards will also be sampled for arsenic to be consistent with the VB/I-70 sampling protocol.

EPA's sampling so far shows that yards with elevated arsenic levels occur randomly throughout the entire VB/I-70 Site. In many

cases, a yard with higher levels of arsenic is located next to a yard where no arsenic was detected at all. These findings and other information indicate that the elevated levels of arsenic in yards likely come from some combination of smelter, industry, and lawn products.

The lead found in VB/I-70 soils likely comes from smelter emissions and, to a lesser extent, lawn care products and other industrial sources.

EPA also found that levels of both arsenic and lead are lower in gardens than in yard soil. This might be because residents added compost and other substances to gardens, tilled their gardens, or because whatever caused the arsenic and lead to be in the yard did not equally affect the gardens. Also, lead and arsenic levels at area schools and parks are low and are not of concern to area children.

How are residents getting exposed to arsenic and lead in soil in these neighborhoods?

EPA concluded that at the VB/I-70 Site health risks may occur when:

- children and long-time adult residents swallow soil and dust particles through routine hand-to-mouth contact during activities such as playing or working outdoors;
- children and long-time adult residents regularly eat garden vegetables grown in home gardens; and
- children with soil pica behavior intentionally eat soil.

Some children intentionally eat non-food items. This unusual behavior is called "pica behavior". Children with pica behavior may intentionally eat unusually large amounts of soil. This could be a health concern because soil can contain bacteria, as well as other harmful substances such as metals.

There are very few scientific studies available with information on soil pica behavior, though the behavior is thought to be rare. EPA believes it is important to recognize this uncertainty while

we consider how the arsenic and lead in soil at the VB/I-70 Site might affect the health of children with pica behavior.

What are the risks to VB/I-70 residents from exposure to ARSENIC from soil?

The toxic effects of arsenic have been determined mainly from studies of humans exposed to arsenic in food and water, not soil. Those studies show that both cancer and non-cancerous effects may occur if a person is exposed to a large amount of arsenic.

EPA has established acceptable doses of arsenic that do not cause non-cancerous effects in people. If exposure to soil within the VB/I-70 Site could potentially result in arsenic doses above the established safe doses, then EPA will take action to reduce exposure.

If exposure to arsenic in soil within the VB/I-70 Site could potentially result in cancer risks above 1 in 10,000 people, then EPA will take action to reduce exposure at this Site.

By comparison, the overall risk of getting cancer just by living in Colorado is 5,000 in 10,000 men and 3,333 in 10,000 women. Though a risk of 1 in 10,000 may seem small in comparison, EPA considers any risk greater than this to be unacceptable.

At the VB/I-70 Site, our studies show that long-time residents who have an average amount of contact with soil, dust, and garden vegetables do not have an unacceptable risk of getting cancer from exposure to arsenic in soil.

However, at properties where arsenic levels are greater than 240 ppm, cancer risks to long-time residents with frequent and heavy exposure to soils are predicted to be unacceptable and cleanup action is needed.

A cleanup action to protect long time residents from this unacceptable cancer risk will serve to protect residents from non-cancer health effects as well. Still, children with soil pica behavior may remain at risk from arsenic levels in soil below 240 ppm. Our Preferred Alternative suggests removing soil above 70 ppm arsenic in residential soils.

What are the health risks to children who have soil pica behavior?

The predictions of risk to children with soil pica behavior are uncertain since there is no supporting medical evidence. In fact, there has never been a reported case of acute arsenic toxicity in humans from arsenic in soil. Nevertheless, because of the potential risk, EPA developed and evaluated cleanup options to protect children with soil pica behavior in the VB/I-70 Site.

Although uncertain, the calculations suggest that at properties where arsenic levels are greater than 47 ppm, there might be small areas within the yard that have higher arsenic levels (i.e. “hot spots”) which are of potential concern for children with soil pica behavior. Pica children at these properties may experience nausea or vomiting if they happen to eat a large amount of soil from these “hot spots”. Removing arsenic above 70 ppm in yards, in combination with our proposed Community Health Program, will address the health risk to a pica child from arsenic in soil.

What are the risks to VB/I-70 residents from exposure to LEAD in soil?

Excess exposure to lead can cause behavioral problems in young children and can affect their ability to learn. EPA's goal for protecting public health is to ensure that there is no greater than a 5 percent chance that a child will have a blood lead level that exceeds 10 µg/dL as a result of exposure to lead in soil. EPA will take action to reduce exposure if this goal is not achieved.

EPA policy recommends a two-step process for evaluating risks to children from exposure to lead in soil at Superfund sites. The first step is to determine whether the levels of lead in soil are below the “screening level” of 400 ppm. If the levels are below 400 parts per million, no further action is required. At the VB/I-70 Site, some of the measured lead levels are greater than 400 ppm in some yards. So, EPA proceeded to the second step. As the second step, EPA policy recommends using an EPA mathematical model to predict the blood lead levels of children exposed to lead in the environment at a particular site.

Because using the model to predict blood lead levels in children at the VB/I-70 Site may not reflect actual results, EPA reviewed the available information on measured lead levels in samples of blood taken from children in VB/I-70. CDPHE offered three separate blood lead testing programs to children living in the VB/I-70 Site and adjacent neighborhoods during the period from 1995 through 2000. Although the blood lead testing was not designed to support the VB/I-70 study, the testing supports the following conclusions:

- some children who live within the VB/I-70 Site have high levels of lead in their blood;
- soil is not likely to be the main source of high blood lead levels in children. Exposure to lead from other sources such as paint is likely a concern at many properties in the VB/I-70 Site; and
- some children who live outside the VB/I-70 Site have high levels of lead in their blood similar to those observed in children who live in VB/I-70.

The recommended EPA model and the specific information from measured blood lead levels indicate that up to 1100 ppm of lead in soil may be protective for this Site. Given, however, that other sources of lead may be present in a child's home, and that EPA received public comments asking for lower cleanup levels, EPA decided to select a more protective standard of 400 ppm for lead in soil.

How is EPA considering Environmental Justice (EJ) concerns?

Community input is very important to EPA. EPA and CDPHE recognize that the VB/I-70 Site is an Environmental Justice site because the community is predominantly low income and minority and is disproportionately affected by environmental impacts from many sources including industry, other Superfund sites, and major transportation corridors. As a result, EPA took several actions.

EPA actively engaged community representatives in its Superfund process for the Site, recognizing that justice means having a voice in decisions that affect their lives. EPA conducted project

management and technical meetings at locations in the VB/I-70 community so that anyone interested could participate in the discussions. Community representatives helped to design the soil collection program and advised EPA on ways people come in contact with soil in the VB/I-70 neighborhoods.

The Site boundaries were also established based on Environmental Justice concerns that the integrity of neighborhoods be maintained and that entire neighborhoods be treated equally. The Preferred Alternative includes a Community Health Program which will address sources of lead exposure other than soil, such as lead paint inside homes. This program is an attempt to address cumulative environmental sources and their impacts in this Environmental Justice community. EPA asks and expects community representatives to work with us to refine the design of this Program and to help us implement it.

What cleanup alternatives did EPA and CDPHE consider?

EPA and CDPHE developed cleanup alternatives to reduce the risks to residents at VB/I-70 to acceptable levels. The alternatives are combinations of the following actions:

No Action: EPA has already removed and replaced the soils at 48 properties in the VB/I-70 Site. Under this option, nothing further would be done by EPA.

Soil Tilling/Treatment: Under this option, surface soils would be tilled to a depth of 6 inches and treated with phosphate and yard features would be restored. The tilling would reduce concentrations of lead by mixing the top few inches of soil with cleaner soil below. The phosphate treatment would reduce the amount of lead in soil that can be absorbed by the body if someone ingests the lead from soil. This option was not considered as a way to address arsenic.

Soil Removal and Disposal: Under this option, soil would be removed to a depth of 12 inches and disposed of offsite at an appropriate facility. The excavated areas would be backfilled with clean soil. Soil removal and replacement would address any unacceptable health risks from lead

and arsenic for any children with soil-pica behavior and it would address any exposure to high levels of lead and arsenic remaining in the soils.

Community Health Program: This program would address the risks to children with soil pica behavior and children exposed to lead from multiple sources. It would also address risks to residents living on soils that are above EPA action levels while they are waiting for an EPA cleanup and at properties where EPA was denied access to sample. The program would assess risks from any and all potential sources of lead exposure including those which may present a greater risk to children than lead in soil. The program would also provide a way to evaluate the effectiveness of the other options.

There would be 3 components in this program: (1) health education; (2) biomonitoring; and (3) response.

The Community Health Program would address as many sources of lead as practicable.

For this Proposed Plan, EPA and CDPHE developed **six cleanup alternatives** five of which will address the health risks to varying degrees, using some combination of the above actions. EPA evaluated these cleanup alternatives against nine criteria specified in Superfund regulations. These criteria are used by EPA at every Superfund site. The nine criteria are:

THRESHOLD CRITERIA

Alternatives must, at a minimum, meet the first two criteria, called the Threshold Criteria, to be retained for further consideration:

1. Overall Protection of Human Health and the Environment considers whether or not an alternative provides adequate protection by eliminating, reducing, or controlling unacceptable risks.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) considers whether or not an alternative will meet all Federal and State standards required by environmental laws or, if not, whether there is justification for waiving the standards.

PRIMARY BALANCING CRITERIA

Alternatives that meet the threshold criteria are next evaluated against the following five criteria known as the Primary Balancing Criteria.

3. Reduction of Toxicity, Mobility, and Volume through Treatment indicates EPA's preference for alternatives that include physical or chemical treatment processes to reduce or eliminate the hazardous nature of material, its ability to move in the environment, and the quantity left after treatment.

4. Long Term Effectiveness and Permanence considers the magnitude of public health risk which will remain after each alternative is implemented.

5. Short Term Effectiveness considers the risks that might be posed to the community and workers during the implementation of each alternative and the time it will take each alternative to achieve protection of human health and the environment.

6. Implementability considers the technical and administrative feasibility of implementing each alternative and the availability of the services and materials required during implementation.

7. Cost considers construction costs as well as long-term operation and maintenance costs of each alternative by considering whether more costly alternatives provide additional public health benefits for the increased cost.

MODIFYING CRITERIA

The last two criteria are used to determine whether the concerns of the State and the public should modify EPA's approach to cleaning up the Site.

8. State Acceptance considers whether the State agrees with, disagrees with, or has no comment on EPA's preferred alternative. CDPHE has already indicated to EPA its support of Alternative 6.

9. Community Acceptance considers the concerns or support the public may offer regarding each alternative. EPA will evaluate Community Acceptance of the cleanup alternatives after receiving public comments on this Proposed Plan. In this case, Alternative 6 was developed based on public comment that EPA received after issuing an earlier version of this Proposed Plan last year. Still, EPA would like to solicit additional comments on whether the public will continue to support Alternative 6 once it is fully evaluated against the other 5 Alternatives.

THE FOLLOWING ARE THE CLEANUP ALTERNATIVES EPA CONSIDERED:

Cleanup Alternative 1:

No Action. EPA removed and replaced the soil from 48 yards in the VB/I-70 Site during the years 1998 and 2000. In Alternative 1, no further cleanup action would be done. Alternative 1 would not meet the Threshold Criteria, overall protection of human health or compliance with ARARs.

Cleanup Alternative 2:

Alternative 2 is a combination of four actions:

- (1) Soil sampling program for properties not yet sampled;**
- (2) Soil tilling with phosphate amendments to treat soil at all properties with lead greater than 540 parts per million;**
- (3) Soil removal, off site disposal, and replacement of soil at all properties with arsenic greater than 240 parts per million; and**
- (4) Community Health Program.**

Either soil removal and disposal or soil tilling and treatment would be required at 202 properties under Alternative 2. Of these properties, 113 require removal because of arsenic levels and 89 require tilling and treatment because of lead levels. Once removed, soil would be transported to either the Asarco Globe Plant site in Globeville or to an appropriate solid waste disposal facility. The Community Health Program would be effective in addressing the theoretical health risks to children with soil pica behavior and the health risks to children exposed to lead from many sources. There is some uncertainty about whether adding soil amendments and tilling of lead in soil would be effective in the long term. More testing would be required to determine exactly how the treatment process would work. So, this alternative would take more time to implement, making it less effective in the short term. There are short-term risks of accidents occurring due to the increase in truck traffic during construction. There is less short term risk in Alternative 2 when compared to Alternatives 3, 4, 5, and 6 since the soil at 89 properties would not need to be removed and transported off the site. EPA estimates that Alternative 2 will cost \$10.6 million.

Cleanup Alternative 3:

Alternative 3 is a combination of three actions:

- (1) Soil sampling program for properties not yet sampled;**
- (2) Soil removal, off site disposal, and replacement of soil at all properties with arsenic greater than 240 parts per million and/or lead greater than 540 parts per million; and**
- (3) Community Health Program.**

Soil removal and disposal would be required at approximately 202 properties under this alternative. Of these properties, 105 require removal because of arsenic levels, 8 require removal because of arsenic and lead levels, and 89 require removal because of lead levels. Once removed, soil would be transported to either the Asarco Globe Plant site in Globeville or to an appropriate solid waste disposal facility.

Alternative 3 is very similar to Alternative 2 but includes soil removal and disposal, rather than soil tilling and adding phosphate at properties where lead levels exceed 540 parts per million. Since there is no treatment process to design, Alternative 3 could be implemented more quickly. Short-term risks of accidents from increased truck traffic are higher than Alternative 2 and lower than Alternatives 4, 5, and 6. EPA estimates that Alternative 3 will cost \$11.1 million

Cleanup Alternative 4:

Alternative 4 is a combination of three actions:

- (1) Soil sampling program for properties not yet sampled;**
- (2) Soil removal, off site disposal, and replacement of soil at all properties with arsenic greater than 128 parts per million and/or lead greater than 540 parts per million; and**
- (3) Community Health Program.**

Alternative 4 is very similar to Alternative 3 but includes soil removal and disposal at properties where arsenic levels exceed 128 parts per million. CDPHE requested that EPA consider a cleanup alternative in which 128 parts per million arsenic is the trigger for soil removal in EPA's original Proposed Plan. Soil removal and disposal will be required at 403 properties under Alternative 4. Of these properties, 306 require removal because of arsenic levels, 31 require removal because of both arsenic and lead levels, and 66 require removal because of lead levels. Once removed, soil would be transported to either the Asarco Globe Plant site in Globeville, or an appropriate solid waste disposal facility.

Short-term risks of accidents from increased truck traffic are higher in Alternative 4 than Alternatives 2 or 3 due to the greater number of yards that would be replaced. However, they are lower than in Alternative 6. Alternative 4 would take less time to complete than Alternative 6, but more time to complete than in Alternatives 2 or 3. EPA estimates that Alternative 4 will cost \$17.5 million.

Cleanup Alternative 5:

Alternative 5 is a combination of two actions:

- (1) Soil sampling program for properties not yet sampled; and**
- (2) Soil removal, off site disposal, and replacement of soil at all properties with arsenic greater than 47 parts per million and/or lead greater than 208 parts per million.**

Soil removal and disposal will be required at 2,122 properties under Alternative 5. Of these properties, 384 require removal because of arsenic levels, 479 require removal because of arsenic and lead levels, and 1259 require removal because of lead levels. 208 parts per million lead is the cleanup level recommended by the EPA model without updated information. Removal of soil alone, without a Community Health Program, would not be as effective as Alternatives 2, 3, 4, and 6 in addressing the risks to children with soil pica behavior and children who are exposed to lead from sources other than soil. The non-soil sources of lead may present a greater risk to children than lead in soil.

Once removed, soil would be transported to either the Asarco Globe Plant site in Globeville, or to an appropriate solid waste disposal facility. Alternative 5 would have the highest short-term risks of accidents from increased truck traffic and would take the longest time to complete due to the increased number of yards that would be replaced. EPA estimates that Alternative 5 will cost \$61 million.

The Preferred Alternative

Cleanup Alternative 6: THE PREFERRED ALTERNATIVE

Alternative 6 is a combination of three actions:

- (1) Soil sampling program for properties not yet sampled;
- (2) Soil removal, off-site disposal, and replacement of soil at all properties with arsenic greater than 70 parts per million (ppm) and lead greater than 400 ppm; and
- (3) Community Health Program

Alternative 6 is similar to Alternatives 3 and 4, but includes soil removal and disposal at properties where arsenic levels exceed 70 ppm and lead exceeds 400 ppm.

Soil removal and disposal will be required at 853 properties. 508 properties require removal because of arsenic levels, 237 require removal because of lead, and 108 require removal because of both. Short-term risks from increased truck traffic are higher in Alternative 6 than in all other alternatives except Alternative 5. EPA estimates the cost of Alternative 6 to be \$31.8 million.

EPA selected *Alternative 6* as the preferred cleanup alternative. Although Alternatives 3 and 4 provide similar overall protection of health, Alternative 6 best meets the 9 evaluation criteria considered by EPA. EPA and CDPHE believe this Preferred Alternative would be protective of human health, would meet all Federal and State standards required by environmental laws, would be effective in the long term, and would be able to be implemented in the VB/I-70 community. In addition, the selection of Alternative 6 is based on community comments received last year on our original proposed plan. At that time, EPA and CDPHE were promoting Alternative 4 as the preferred alternative. However, EPA received considerable public comment in support of lower cleanup numbers. EPA responded by developing Alternative 6, which has cleanup levels for lead and arsenic that are compatible with that public comment. Also, the State and many community leaders requested that action levels for the VB/I-70 site be consistent with the action levels being implemented at the adjacent Globeville Superfund site. Lastly, community leaders commented that they believed more soil removal would be more protective of VB/I-70 community members, especially children.

EPA will remove the top 12 inches of soil from yards where arsenic levels exceed 70 ppm and/or lead levels exceed 400 ppm. The soil will be transported off the VB/I-70 Site for disposal at either the Asarco Globe Plant site in Globeville or at an acceptable solid waste disposal facility. The yards will be backfilled with clean soil and yard features will be restored as much as possible. EPA will make every effort to sample yards that have not yet been sampled, and these yards will be cleaned up as necessary. EPA estimates that 853 yards will require this cleanup action.

Children who live in the VB/I-70 Site will be further protected by a Community Health Program for at least the duration of the cleanup activity with the following components:

- Health education to raise overall community awareness about soil pica behavior and childhood exposure to lead from all sources. The education will focus on strategies to reduce or avoid exposure to lead and to arsenic in soils, and the health effects of exposure;
- A testing program to measure levels of lead in children's blood and levels of arsenic in children's urine in order to identify those children with higher than normal levels; and
- An investigation and response program to identify soil and non-soil sources of lead and arsenic at homes of children with greater than normal exposure, to address the source of lead or arsenic exposure for an individual child, and to refer people with excessive exposure to arsenic or lead to a health care provider.

Table 1: Comparison of Remedial Alternatives Against the Superfund Evaluation Criteria							
Evaluation Criterion	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Notes
1. Overall Protection of Human Health and Environment	○	◐	●	●	◐	●	The community health program is a component of Alternatives 2,3, 4 and 6 providing greater overall protection. Since Alternative 5 doesn't include a community health program, it does not address soil pica behavior in children and/or children exposed to lead from non-soil sources that may present a greater risk than soil.
2. Compliance with ARAR	○	●	●	●	●	●	Alternatives 2,3,4, 5, and 6 are expected to meet ARARs.
3. Reduction of Toxicity, Mobility, and Volume through Treatment	○	◐	○	○	○	◌	Neither Alternative 3, 4, 5, nor 6 include treatment. Alternative 2 includes a phosphate treatment of soil.
4. Long Term Effectiveness and Permanence	○	●	●	●	◐	●	Alternative 5 will not address soil pica behavior and children exposed to lead from non-soil sources that may present a greater risk than soil.
5. Short Term Effectiveness	○	◐	●	◐	◐	○	Alternatives which include a greater number of yards to be removed have higher short-term risks because of increased truck traffic in the community.
6. Implementability	●	◐	●	●	●	●	Soil tilling in residential yards (Alternative 2) will likely be more difficult to implement than soil removal.
7. Cost Effectiveness	○	◐	●	◐	◐	○	Alternatives 4, 5, and 6 do not provide a substantial increase in overall protection for the increased cost.
8. State Acceptance	○	○	○	◐	◐	●	CDPHE prefers Alternative 6
9. Community Acceptance							Community acceptance will be evaluated after the close of the Public Comment Period. However, community comments on an earlier Proposed Plan indicate it prefers alternative 6.
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